

later, in 1895, the postal ballot in its present form was introduced. In 1877 he delivered a series of lectures on water-supply at the School of Military Engineering at Chatham. These lectures were published in book form and formed a valuable contribution to the subject, and two editions were called for. In 1913 he published an important book on "Rainfall Reservoirs and Water Supply," based on public lectures which he had delivered at the request of the Chadwick Trustees.

Sir Alexander was very interested in the history and lives of the early engineers, and dealt with this subject in a very wide way in his Presidential Address in 1905. His own words were: "I propose this evening to trace out some of the circumstances which surrounded the lives of our predecessors." The result was a very interesting and valuable address.

Few engineers had more personal friends than Sir Alexander Binnie. His great practice in Parliamentary Committees brought him into contact with a very large number of persons, who were always attracted by his quiet, pleasant and genial manner. While Engineer to the London County Council he came in contact with a continually changing number of members, and was fortunate in obtaining their confidence and respect. His work in connection with the Thames tunnels and the Metropolitan Water-Supply, while with the London County Council, was of great value and was fully appreciated by the body he was working for. The late Sir William Preece, when proposing a vote of thanks to him after his Presidential Address, said "he was possessed of a remarkable philosophical mind," and Sir Alexander owed a great deal of his success to that fact. He was an Engineer who always set a high standard for himself, and wished to see the same line followed by all those who worked under him.

Sir Alexander frequently joined in the discussions at the Institution and, in addition to his Presidential Address, contributed Papers on "The Nagpur Water Works" and "On Mean and Average Rainfall and the Fluctuations to which it is Subject," for which he was awarded a Telford and a George Stephenson medal. He also delivered an address to Section VI of the Engineering Conference of 1903.

BENJAMIN HALL BLYTH, Past-President, son of a Member of The Institution of the same name, who occupied a prominent position in the profession during the busy railway times between 1844 and 1864, was born in Edinburgh on the 25th May, 1849.

He was educated at Merchiston Castle School and at Edinburgh University, where he graduated M.A. at the early age of 18; and he then entered the office of Messrs Blyth & Cunningham as an apprentice, the partners in the firm being his uncle, Edward L. I. Blyth, and George Miller Cunningham, his father having died in 1866. During his apprenticeship, the firm was engaged, among other large works, on the construction of the Callander and Oban Railway, 70 miles in length, through the heart of the

Scottish Highlands, and Mr. Blyth had thus the best possible opportunity of obtaining a practical knowledge of every variety of field work, which stood him in good stead when he came personally to have the oversight of extensive works.

At the conclusion of his apprenticeship in 1871, he was assumed as a partner in the firm, and although more than once laid aside by illness, he led a very strenuous professional life almost up to the day of his death. Mr. E. L. I. Blyth retired from business in 1886, and Mr. D. M. Westland, who had been for many years with the firm, was assumed as a partner, the name of the firm being changed to Cunningham, Blyth & Westland. Mr. Cunningham retired in 1896, and the firm was continued under the name of Blyth & Westland, Mr. Blyth and Mr. Westland being the sole partners until Mr. Blyth's nephew, Mr. B. Hall Blyth, junior, joined them in 1910. Mr. Westland retired from business in 1913.

It would be an endless task to enumerate all the works in which Mr. Blyth took part, but some of the more prominent may be mentioned. The first large work of which he personally took charge, was the new Citadel Station at Carlisle, involving the re-construction of the lines of four Railway Companies entering from the south, and three from the north, so as to entirely separate the passenger and goods traffic and avoid several dangerous railway level crossings. The whole works cost nearly £400,000. At the same time his firm was constructing, for the Caledonian Railway Company, the Central Station in Glasgow with its connecting lines, including a large viaduct, with four lines of rails, over the Clyde, the total cost of the works being about £500,000; and also a large new dock at Grangemouth at a cost of over £300,000. Other stations which have been built or re-constructed by his firm include the General Station at Perth, the Joint Station at Paisley, Bridge Street Station in Glasgow, Princes Street and Waverley Stations in Edinburgh, and the Central Station at Leith. Among many bridges designed and built by his firm, may be mentioned the new Broomielaw Bridge over the Clyde at Glasgow, the new North Bridge connecting the old and new towns of Edinburgh, the Victoria Bridge over the Dee at Aberdeen, the Victoria Bridge over the Tay at Perth, besides bridges over the Tweed, the Spey, the Ayr, the Gala, and other rivers, and three bridges under the Forth and Clyde Canal for roads leading out of Glasgow. One of the last works on which Mr. Blyth was engaged was a large new dock at Methil, mainly for the shipment of coal from the extensive coalfields in Fife. This work, the third dock constructed by his firm at the same port, involved an immense sea wall, more than a mile in length, and as it was fully exposed to the severe storms so frequent on the East coast, its construction involved many very difficult problems. Mr. Blyth was well known in the Parliamentary Committee Rooms, where he was held in high esteem, and he was also much engaged in Court Cases and Arbitrations.

He was elected a Member of The Institution in 1877, a Member

of Council in 1900, Vice-President in 1911, and President in April 1914, for the year 1914-1915, being the first engineer practising in Scotland on whom the honour of President had been conferred. While holding the office of President, Mr. Blyth was asked by the War Office to preside over a Commission, to be nominated by him from among leading Members of The Institution, to advise as to the designs, material, and method of construction in connection with the hutted camps throughout the country consequent on the great War. Most of the then existing hutted camps were inspected and a voluminous report was prepared and handed to the War Office for future guidance. He was also the first Chairman, and was largely instrumental in the formation of the Metropolitan Munitions Committee, but failing health ultimately compelled him to resign that position.

Mr. Blyth had many interests outside his profession. He contested the County of Haddington on three occasions in the interests of the Unionist Party; he was known both in Scotland and England as one of the keenest of golfers, and at the time of his death he was Chairman of the Edinburgh and District Tramways Company, and Director of the National Bank of Scotland, the Edinburgh Life Assurance Company, and the Royal Edinburgh Hospital for Sick Children. In 1873 he joined the Royal Company of Archers, which is the King's Body-Guard for Scotland, and remained a member during the rest of his life.

Mr. Blyth died at his summer residence in North Berwick on the 13th May, 1917, within a few days of completing 50 years of professional life.

JAMES FORREST passed away a few months after attaining the great age of 91 years, of which practically 75 were spent in the service, direct or indirect, of The Institution. He was born in Westminster on the 30th November, 1825, and began his professional training in 1842 as a pupil of Messrs. Edward and John Manby, but principally with the brother of these gentlemen, Mr. Charles Manby, who was then the Secretary to The Institution. Later, Mr. Forrest passed a probationary period as Assistant to Thomas Grainger, a well known North-country engineer, spent principally on railways in Yorkshire, and later became Assistant Secretary of the Society of Arts. He returned to the Civil Engineers in 1856, to succeed Mr. Manby in the Secretaryship with the title of Assistant Secretary, Mr. Manby retaining the title of Secretary until 1859, when the latter became Honorary Secretary, and Mr. Forrest was formally appointed Secretary. He had in fact during the preceding 3 years actually performed all the duties of, and had exercised, the full responsibility of Secretary. From this time onward Forrest was a leading spirit in the "forward" movement which resulted in The Institution throwing off the trammels imposed upon it by a rather timid policy of its earlier governing body, and affirming the proposition that, far from being restricted to engineers of roads, bridges, harbours, docks, light-